

Puget Sound Energy Energy Efficiency: 101

June 13, 2023

Ellis Bouw, Energy Management Engineer

Greg Skurupey, Account Executive



*PUGET
SOUND
ENERGY*

Agenda

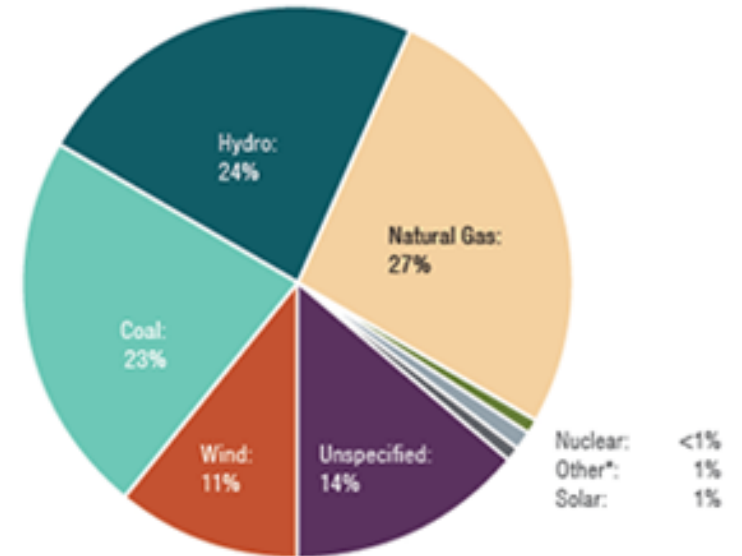
- Introductions
- About PSE
- Energy Efficiency
 - Business Energy Management
 - Renewable Energy
- Programs Spotlight
 - Industrial Programs
 - New Construction
 - Clean Buildings Accelerator
- How to get started
- Questions



*PUGET
SOUND
ENERGY*



- 1.1 million electric customers
- 900,000 natural gas customers
- 6,000 square miles
- 10 counties



Why Energy Efficiency?



PUGET
SOUND
ENERGY

PSE 2030 – Beyond Net Zero Carbon



CETA Implementation

- Support PSE's transition to a clean, compliant resource supply



Natural Gas Decarbonization

- Educate stakeholders and participate in development of legislative solutions
- Build and execute decarbonization strategy, targets and timelines



Regulatory and Legislative Enablement

- Achieve a regulatory and policy landscape that empowers PSE 2030 and our Beyond Net Zero Carbon goals



Customer Solutions

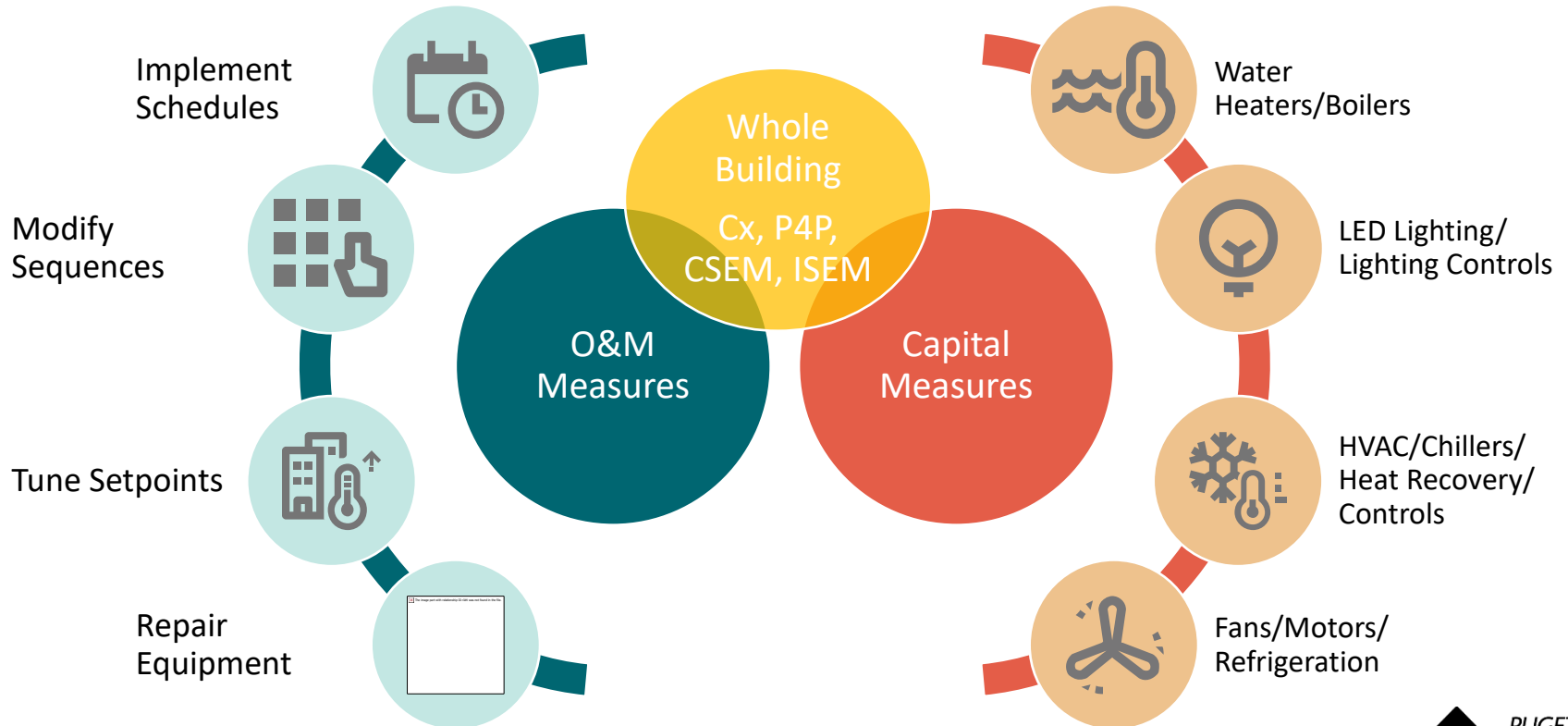
- Customer-focused offering development, with continued reliability and affordability
- Business growth through prioritized investments and potential diversification opportunities



**PUGET
SOUND
ENERGY**

For more information about PSE 2030 visit
<https://team/sites/PSEWeb/AboutPSE/Initiatives/PSE-2030>

Programs at a Glance



Renewable Energy Options



◆ Washington's largest and oldest utility, **serving 1.5 million customers** in 10 counties.

Industrial Strategic Energy Management (ISEM)

- ◆ Provides customers with the tools and training to develop an on-site energy management team
- ◆ Creation of an Energy Team
- ◆ Workshops
- ◆ Treasure Hunts
- ◆ Engineering Support
- ◆ Incentives

◆ Washington's largest and oldest utility, **serving 1.5 million customers** in 10 counties.

ISEM Case Study: Conagra Foods

- 436,522 kWh saved
- \$8,730 PSE Incentives
- \$36,668 energy cost savings

“Some of the biggest savings we realized were through switching off equipment and machinery when not in use. It takes every single employee doing that to notice results, and motivating those behavioral changes was one of our biggest challenges. It’s something we continue to work on.” Barrett Reidinger Environmental, health and safety manager at Conagra

Industrial System Optimization Program (ISOP)

- ◆ Two part energy audit
 - ◇ Initial Scoping
 - ◇ Deep Dive
- ◆ List of no/low cost energy efficiency action items
- ◆ Guidance from PSE on implementation
- ◆ Performance based incentives

◆ Washington's largest and oldest utility, **serving 1.5 million customers** in 10 counties.

ISOP Case Study: Trident Seafoods

- 797,000 kWh saved
- \$28,208.63 PSE Incentive
- \$51,092 energy savings

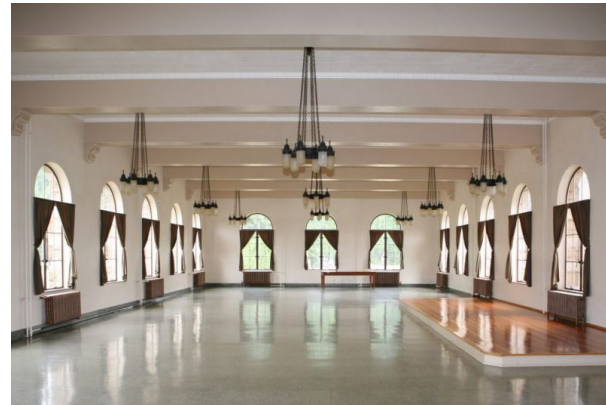
“Over the years we’ve increased production by 25 percent while our electric bills have remained close to the same. PSE has been a big part of that accomplishment.” - Jeff Johnson, Trident Seafoods Facilities Manager

The Lodge at St. Edwards State Park



From vacant seminary to serene getaway lodge

- ❖ Historic seminary building, vacant for over 40 years
- ❖ Proposed renovation project to an 84 room park lodge
- ❖ Grant approach: PSE New Construction Energy Modeled Whole Building according to 2015 WSEC.
- ❖ Historic roof, building envelope and windows to remain intact



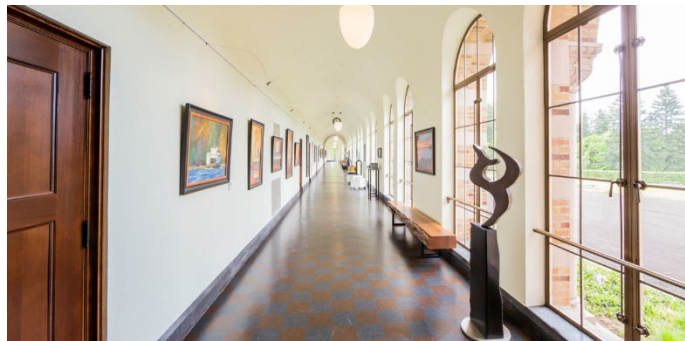
The project

- ❖ Proposed energy efficiency improvements
 - ❖ Interior and exterior LED lighting
 - ❖ High efficiency air source with Variable Refrigerant Flow (VRF)
 - ❖ Dedicated Outside Air System (DOAS) with improved heat recovery efficiency
 - ❖ Condensing domestic hot water (DHW) equipment
- ❖ Baseline: 1.293.311 kWh & 62,265 therms
- ❖ Savings: 309.024 kWh & 18,753 therms
- ❖ Total PSE Grant amount: \$178.177



The result: a lodge in St. Edwards Park

- ❖ Completely restored lodge
- ❖ Project was completed in May 2021
- ❖ The park lodge has 84 guest rooms, a conference center, meeting rooms, wellness spa, restaurant and a café.



Alternate New Construction EUI Method

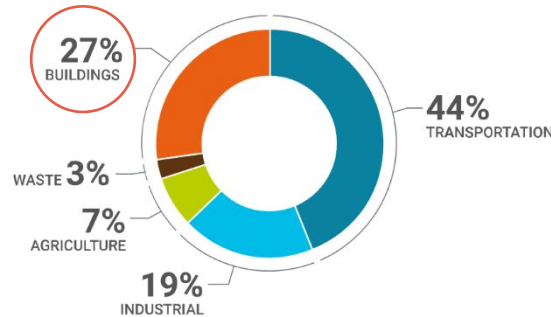
- ❖ Newer incentive with easier requirements
- ❖ Baseline: Clean Buildings New Construction Energy Use Intensity Targets (EUI_t)
- ❖ Proposed: EUI of at least 10% below baseline after performance period
- ❖ Example: Chinook Elementary in Auburn SD
 - ❖ Baseline for Elementary Schools being 42 kBtu/sf
 - ❖ School designed to 33 kBtu/sf
 - ❖ Anticipated total grant in the range of \$25,000-\$30,000 (pending actual performance)

HB1257: Clean Buildings Law

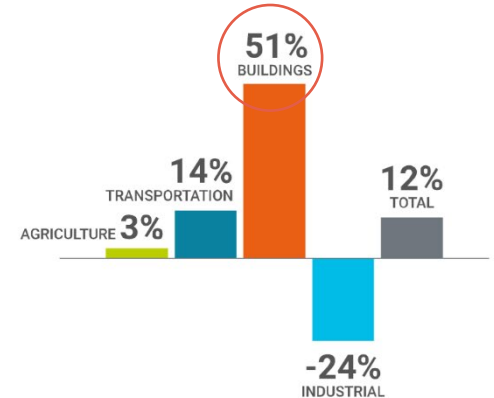
- ◆ The first statewide **commercial buildings performance standard** in Washington
- ◆ The objective is to **lower costs and pollution from fossil fuel consumption** in existing buildings.
- ◆ Applies to **existing commercial buildings** greater than 50,000 sq. ft.

Why did the state introduce this law?

Buildings are the second largest source of greenhouse gas emissions in Washington (2015)



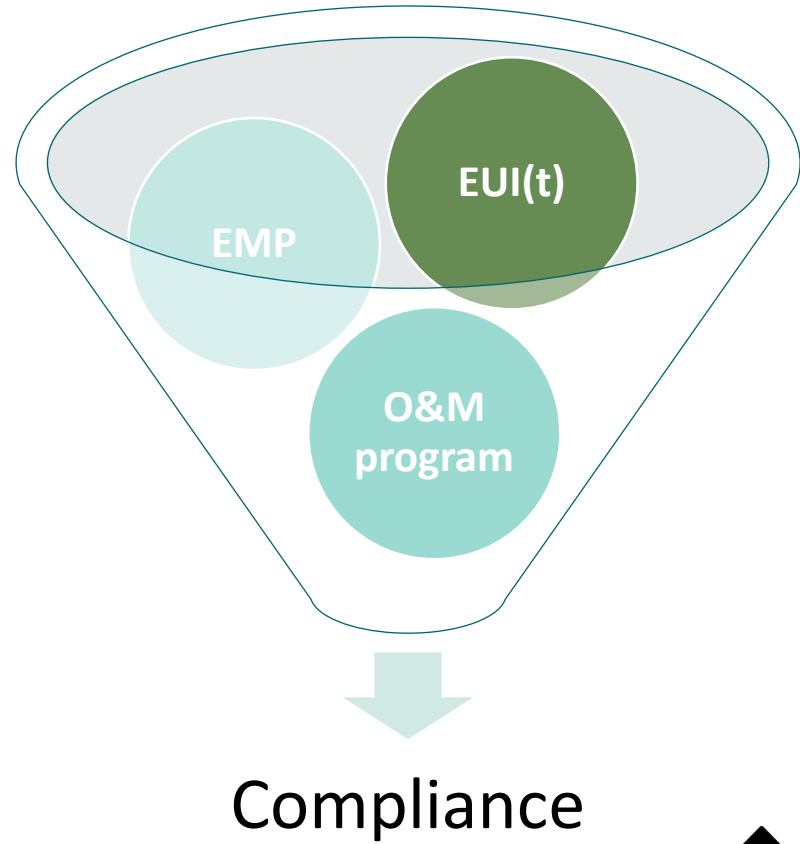
As Washington's population has grown, greenhouse gas emissions from buildings jumped significantly from 1990-2015



<https://www.commerce.wa.gov/growing-the-economy/energy/buildings/clean-buildings-standards/>

How to meet compliance?

EUI = Energy Use Intensity
EUI_t = Energy Use Intensity Target
EMP = Energy Management Plan
O&M = Operations & Maintenance

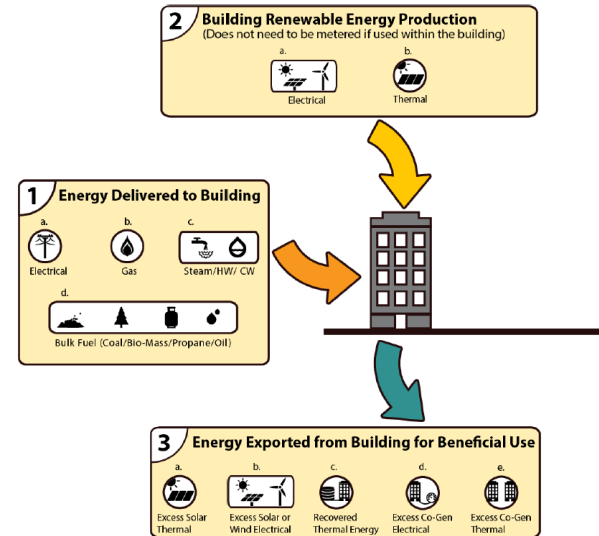


What are EUI's and EUIt's?

- ◆ Normalized way to measure energy use for different building types
- ◆ **Energy Star Portfolio Manager (ESPM)** is the required reporting tool and PSE's **EnergyCap** feeds ESPM automatically.
- ◆ Targets will be reviewed every **5 years**

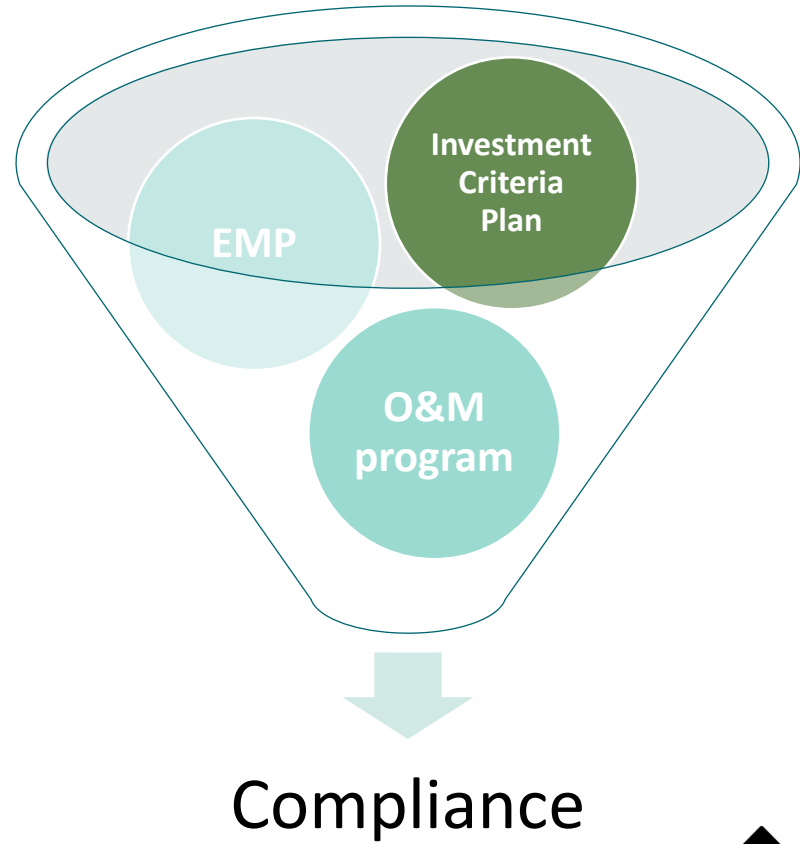
EUI = Energy Use Intensity
EUIt = Energy Use Intensity Target

$$\frac{\text{annual net energy use (kBTU/year)}}{\text{Gross floor area (sq ft)}}$$



Alternative path to compliance

EMP = Energy Management Plan
O&M = Operations & Maintenance



Why customers need to know

- ◆ Compliance required by **June 1** of each year below with 5 year review cycles

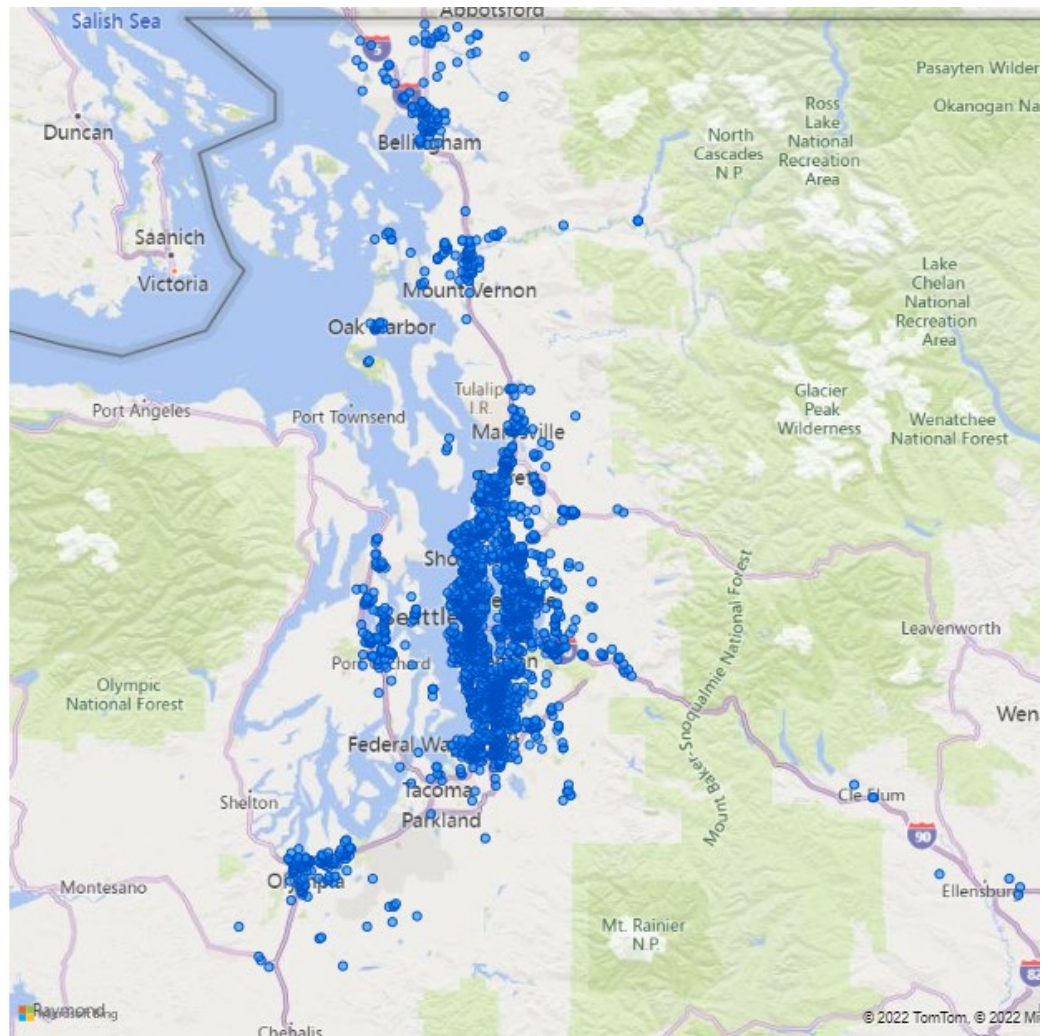


- ◆ EMP and O&M program must be operationalized **one year prior to deadline**
- ◆ **1 year of energy data required** and EUI must be at or better than target

Why customers need to know

- ◆ Annual noncompliance penalty:
 - Mitigation plan: \$5000 + \$0.20/sq. ft./year
 - No mitigation Plan: \$5000 + \$1/sq.ft./year
- ◆ Conditional Compliance
 - Apply 180 days before due date
- ◆ Tier 2 Building rules are in development
 - 20,000-50,000 sq. ft. building rule making
 - Requires benchmarking, EMP and O&M program by mid-2027
 - No targets set...yet

Identified
7,000+
buildings
that need to
comply with
the law in
PSE territory



Clean Buildings Accelerator

- ◆ Designed to **help customers comply with the law**
- ◆ Partnered with **Stillwater Energy**
- ◆ **Achieve energy savings** with participants who are responsible for energy in buildings (up to 3 buildings)
- ◆ Program is **no-cost** to participants

Path to compliance



Energy Manager tools and guidance



Hands-on ESPM Bootcamp and Support



Energy Management Plan Practicum with Templates

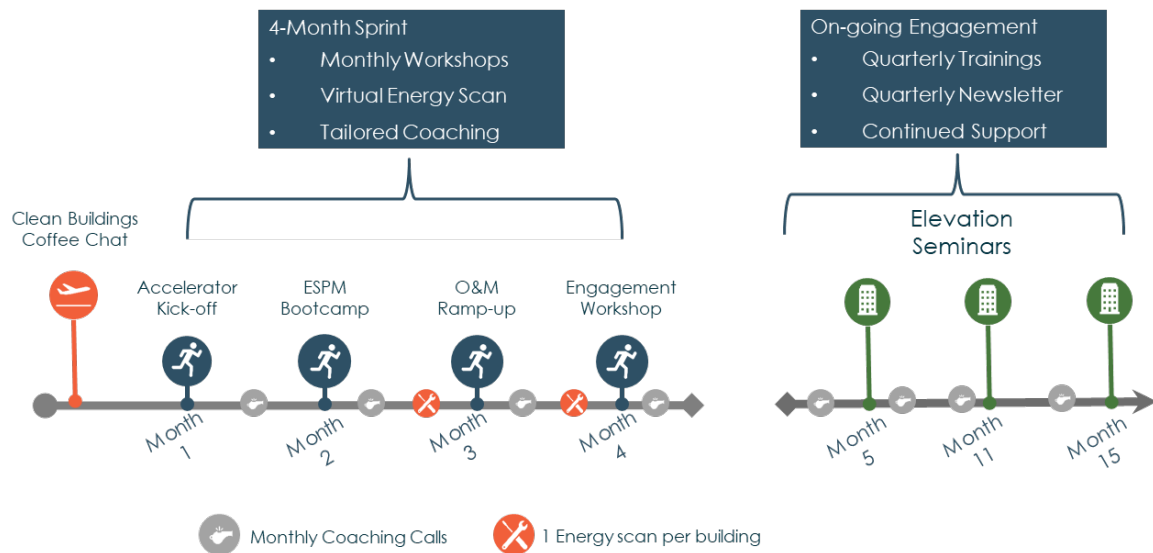


O&M Program Tools and Ongoing Elevation Seminars



Guided EUI assistance using ESPM

Timeline



Results to date

- ◆ 8 cohorts to date, guided over 70 participants
- ◆ Top 5 finalist for the EEI Edison Award
- ◆ CBA adopted by several other utilities
 - Snohomish PUD
 - Pacific Power
 - Avista
 - Seattle City Light
- ◆ ~50% of the participants roll into other incentive programs

If it saves energy, we want to help you pay for upgrades!

Prescriptive Rebates: per/unit savings, regardless of building size

Lighting, Water heaters, Heat Pump's, Laundry & Food Service equipment

Custom Grants: Any cost-effective project that saves energy

Boilers, Heat Recovery, Lighting, Chillers, Controls upgrades, Refrigeration...

Commissioning: *Full commissioning, Tune Ups, Monitoring based*

Pay for Performance: Pay at the meter for capital and O&M improvements

Flexible, and perfect for deep, multi-measure retrofits

Commercial SEM Program – O&M & Behavior Improvements

Excellent for campuses/multi-building ownership.

Industrial - *SEM, System Optimization, Custom programs, Small Industrial*

New Construction – *EUI performance method, Whole building energy model approach, or Individual measure approach*

How to get started?

Contact one of our Account Executives today!

Gregory Skurupey – Industrial/ Hospitals - Gregory.Skurupey@pse.com - 425-492-6493

Brian Zoeller- National Accounts/Clean Buildings – Brian.Zoeller@pse.com – 503-709-0683

Beth Gilbertson – School Districts, Higher Ed & Municipalities – Beth.Gilbertson@pse.com
– 253-867-7965

Jon Wright – Property Management/Real Estate/ Small Business –
Jonathon.Wright@pse.com – 253-302-0764